

ABSTRACT

The invention provides a method and apparatus for directing a radiation beam (504, 606) in a desired direction. There is provided a movable member (10) supported for movement by a fixed member (40) and the movable member has an optical element, e.g. a flat mirror (30) fixedly attached thereto. In one embodiment the mirror scans a radiation beam incident thereon in one plane. In a second embodiment, the radiation beam is scanned in two mutually perpendicular planes. A magnetic element (50) having a north and a south magnetic pole is fixedly attached to the movable member (10). A magnetically permeable stator element (70) that is stationary with respect to the movable member (10) and the magnetic element (50) is placed in the field of the magnetic element such that the stator element and said magnetic element mutually generate a magnetic traction force between them. A current coil (60) is wound around a portion of the stator element (70) and a current driver (400) is provided for driving a current in the current coil (60). The current induces an electromagnetic force in the stator element (70) and the electromagnetic force acts on the magnetic element (50) for controlling movement of the optical element (30) with respect to the fixed element (40). A radiation beam source (502) may be directed onto the movable mirror surface (30) and scanned by the movement of the mirror to direct the radiation beam in a desired propagation direction. Alternately, a radiation source (604) may be attached to the movable member (10) and pointed in a desired direction.